



<b>Title</b>	<b>Hyphal invasion of <i>Candida albicans</i> inhibits human beta-defensins expression</b>
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# 0843 Hyphal Invasion of *Candida albicans* Inhibits Human Beta-defensins Expression

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Oral epithelium reacts to microbial challenges by eliciting a defensive response that includes the production of antimicrobial peptides. **Objectives:** The present study aimed to investigate the expression of human b-defensins (hBDs)-1, 2 and 3 in experimental oral candidiasis. **Methods:** Reconstituted human oral epithelia were infected with six different *Candida* species, and a wild type *C. albicans* isolate and five of its mutants. hBD peptide and mRNA expression in the epithelia were examined by immunohistochemistry and *in situ* hybridization, respectively. **Results:** The expression of hBDs was induced after 12 h of infection with the wild type *C. albicans*, but this response was not observed for the noninvasive hyphal mutants or the secreted aspartyl proteinase (Sap) mutants. Furthermore, hBD expression was not detected after 48 h in the epithelia infected with either *C. albicans* wild type isolate or its invasive hyphal and SAP mutants. Most of the non-*albicans-Candida* were capable of inducing the expression of hBDs in epithelia after 24 or 48 h of infection. **Conclusions:** These *Candida*-host interaction patterns suggest that the oral epithelia possess mechanisms for sensing the early invasion of *C. albicans* through recognition of the presence of hyphae and Saps of *Candida* and respond to the insult by producing antimicrobial peptides. This hyphal-invasion-dependent-inhibition of hBD expression in oral epithelium that undermines the host surveillance system represents a hitherto undescribed novel pathogenic mechanism of *C. albicans*. Supported by Hong Kong Research Grants Council (RGC HKU 7310/00M, 7518/05M & 7339/02M).

[Seq #72 - \*Candida\*](#)

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